2. On the probable Identity of certain Specimens, formerly in the Lidth de Jeude Collection, and now in the British Museum, with those figured by Albert Seba in his 'Thesaurus' of 1734. By Oldfield Thomas.

[Received April 5, 1892.]

In 1867 the British Museum purchased, through the late Mr. R. Damon, a large quantity of zoological specimens of all sorts out of the collection of Prof. Th. van Lidth de Jeude of Utrecht. Of the mammals, about 280 are preserved entire in old-fashioned glass jars with red wax tops, and 330 are skulls.

In the well-known folio work by Albert Seba, 'Locupletissimus rerum naturalium Thesaurus,' vol. i., there is a frontispiece with the author's portrait, and behind him are specimens in bottles so exactly like those of the Lidth de Jeude collection as to have attracted my attention to the circumstance; and although it has since proved that such bottles were used by Lidth de Jeude himself and others, yet as the suspicion thus aroused was confirmed by my finding some of the specimens to be similar to the animals figured by Seba in this work, a thorough examination has been made, with the startling and unhoped for result of showing that many of these Lidth de Jeude specimens are actually the very individual examples figured by Seba. Of course, one or two, or even five or six cases of resemblance might have been put down to accidental coincidences, but so large a number prove to correspond in every way to Seba's figures and descriptions, that I no longer have a doubt as to their being really Seba's specimens, carefully preserved by their successive possessors in the original hermetically sealed jars in which he placed them. Naturally, in the course of time, many have been lost, others have deteriorated and been destroyed, and others again have been alienated in ignorance of their special value and interest. But in spite of all, enough remain to raise their resemblance to Seba's figures far beyond the region of accidental coincidence, and, as each specimen identified increases the probabilities for the identification of the rest, in the aggregate to amount practically to a proof of the opinion now advocated. In fact the whole British Museum collection from other sources could not produce so many close resemblances to Seba's figures as occur in this one collection of Lidth de Jeude. It may be noted that, judging by the old tickets on the bottles, there appear to be two sets of specimens in the collection—the bottles of the one labelled with large printed numbers, and of the other with manuscript numbers, evidently of an earlier date; all the cases of asserted identity occur in the latter part of the collection, an evidence in itself that these have some common bond of origin. At the same time the importance of this piece of evidence is unfortunately much weakened by the fact that many of the identified specimens have

been rebottled, so that one cannot tell with certainty [1] to which part of the collection they belonged.

Owing in part probably to some of the intermediate possessors not having been interested in anything but Mammalia, and in part to the comparative absence of individuality in specimens of the lower classes, scarcely any identification has been made in other groups than the Mammalia. But as the Lidth de Jeude collection acquired by the Museum contains specimens of all classes, both of Vertebrates and Invertebrates, as did also the Seba cabinet, there is little doubt that some of Seba's specimens are contained in it, if only they could be identified. At the same time no members of other groups have upon them the old MS. labels to which I attach so much importance. Moreover, the Seba collection of Reptiles was wholly, or in part, purchased by the Emperor Peter the Great, and taken to St. Petersburg, where many of the specimens are still preserved [2]. Unfortunately they were all rebottled some years ago, so that none are left in the original bottles; Dr. Strauch, however, as I am kindly informed by Dr. Büchner, well remembers that the bottles were exactly like those figured by Seba, and therefore like those of the Lidth de Jeude collection. As to the labels, several sorts seem to have been on the bottles, but none quite like those now on our bottles.

Among the Reptiles and Fishes, in the examination of which I have had the assistance of my colleague Mr. Boulenger, one snake (*Eunectes murinus*, 66.8.14.308) and one fish (*Chætostomus cirrhosus*, 66.8.14.154) agree so well with Seba's Vol. ii. pl. xxix. fig. 1 and Vol. iii. pl. xxix. fig. 12 respectively, that, viewed in conjunction with the Mammal identifications, it appears very probable that these specimens are Seba's originals, and that they escaped Peter the Great, and passed with the Mammals into the hands of Prof. Lidth de Jeude.

It is an unfortunate thing that none of the many eccentricities figured by Seba, such as the Cat with two bodies, &c., are identifiable, as they would have been better evidence of identity than any I am able to produce; but the fact is easily explicable, as the British Museum never has purchased or collected any such specimens, and therefore even if, as no doubt was the case, any of Seba's monstrosities were included in the "collection très remarquable de fœtus monstrueux" of the Lidth de Jeude collection, they would not

[1] In an interesting leaflet which I owe to the kindness of Mr. R. F. Damon of Weymouth, there is a rough classification of the Lidth de Jeude Museum, and among the chief headings is one of "Une série de fœtus des races humaines et des Mammifères." Now, on examining the Museum specimens bearing the printed Lidth de Jeude labels, I find that without exception they are either young specimens or else mothers containing fœtuses, so that we may presume that of the rebottled specimens those at least which are adult would not have had the printed numbers, and would therefore in all probability have had the old MS. labels upon them.

[2] See Strauch, Zool. Mus. St. Petersb. in seinem fünfzigjähr. Best. p. 192 (1889). Dr. Büchner informs me that a large part of this collection was destroyed by fire in St. Petersburg in 1747.

have been acquired by our own Museum; nor am I able to trace where they have gone.

Before proceeding to a detailed account of my identifications, I propose to give such scraps of historical evidence about the Seba and Lidth de Jeude collections as I have been able to get together, and I hope that these in course of time will be supplemented by other similar items of information.

Firstly, from the preface to the fourth volume of the 'Thesaurus' we learn that, although Seba himself died in 1736, the collection was not dispersed until 1752, when it was sold by public auction in Amsterdam.

It next, probably not very long afterwards[1], passed into the possession of the Stadtholder, William V. of Holland, or at least of his guardians, he being a boy of four at the time of the sale. But when the French occupied Holland and the Stadtholder fled in 1795, the invaders, as was their habit in regard to objects of art and science, brought back with them to Paris certain of the specimens of the Stadtholder's collection. Of these, or at least of the Mammals, a list has most fortunately been preserved in the Archives of the Paris Museum, a copy of which I owe to the kindness of Prof. A. Milne-Edwards. This list, however (see below p. 317), shows that no such specimens as are now attempted to be identified went to Paris at that time. Indeed, such specimens as these animals in spirit would not have been very attractive to the French military and unscientific collectors, and they therefore, no doubt, remained in Holland, but in whose hands I cannot trace.

The next reference is one which, so far as it goes, is antagonistic to the idea of any of Seba's spirit-specimens having been preserved until now, and it deserves, therefore, careful consideration. In 1853 Temminck, the famous head of the Leydeu Museum, made the two following statements[2]:—

"Seba rassemblait, sans choix ni ordre systématique, toutes sortes d'objets curieux; parmi les mammifères, les monstres et les fœtus étaient les plus nombreux; toute sa collection, conservée à l'esprit de vin dans des bocaux de verre, était, après sa mort, en grande partie détériorée." And:—

"Il y a plusieurs années (cinquante ans à peu-près) que je fis l'acquisition de quelques bocaux, provenant des débris des collections de Seba; dans ce nombre se trouvait un très-jeune individu de notre *Spiniger*; il était totalement décoloré et à peine reconnaissable. Ce sujet, qu'on a monté, se trouve dans nos galeries. C'est *peut-être* l'individu type du *Cervus perpusillus* ou bien de *Cervus pergracilis* de Seba."

[1] Perhaps Pallas visited Amsterdam in the interval, for in 1797 (Nov. Glires, p. 314) he says of *Mus longipes* (Seba, vol. ii. plate xxix. fig. 2): "vidi quondam Amstelodami e Museo Sebæ reliquum specimen in collectione DN. Chr. Paul Meier, mercatoris." Later on he speaks of this specimen as having been a skin, so that it could not be one of our specimens, but might have been one of the "Deux Gerboises de la petite espèce" that went to Paris (see below, p. 317).

[2] Esq. Z. Guin. pp. 202, 203 (1853).

Now in reference to these serious statements, it may be observed that Seba's great collection consisted of mammals, birds, reptiles, scorpions, shells, echinoderms, and many other invertebrates, and might, therefore, easily be "en grande partie détériorée," especially as regards the softer and more destructible invertebrates, and yet leave the majority of the mammals unhurt; while, as regards the Royal Antelope ("notre *Spiniger*"), of course the accidental opening or leakage of a single bottle would imply the destruction of its contents. But except for Temminck's bare statement, and it is by no means certain that he really knew much about the condition of "toute la collection," he only having obtained "quelques bocaux," there seems to be no reason whatever that specimens preserved as these are in hermetically sealed bottles and in good preserving fluid should be really seriously deteriorated merely by the lapse of time. Certainly, judging by the present condition of the Lidth de Jeude collection, there seems to be no reason against their having been in the bottles they now are for the past 160 years, or, if untouched, for their remaining very much in their present condition for centuries more.

Of other references to this collection, at this time or later, I can find no trace. Probably it got into the hands of one or several successive private and scientifically unknown collectors of curiosities before coming into the possession of Prof. Lidth de Jeude.

Of the latter's museum, we only know what is stated in the preface to his sale-catalogue of 1858. In this he utters a pathetic lament at being forced to part with his collection, the result of half a century's labour. This period would carry back the commencement of his collecting to 1808, a date very near that when some of the Seba specimens were certainly still in existence, as we know from Temminck. Among the collections and even "Musées entiers" which he acquired during the half-century were those of "Mr. le Baron van der Capellen, ancien Gouverneur des Indes Orientales, Mr. van Klinkenberg, amateur zélé à Utrecht, Messrs. Muller, Draak, etc."

Of these gentlemen the first would not have been likely to possess a general collection, of the last two I know nothing; but of the second, the most likely sounding of all, thanks to the kind researches of Dr. F. A. Jentink, of the Leyden Museum, we know that his full name was Gysbert Johannes van Klinkenberg, that he set up as an apothecary in Utrecht in 1802, that he had large Natural History collections, and that these were sold by auction on Nov. 8, 1841. The majority of the specimens were bought by Prof. Lidth de Jeude, but as this was done privately no sale-catalogue of them was printed. It may be noted, however, that among the books sold[1] at that sale there were *two* copies of Seba's 'Thesaurus,' rather a cumbrous work for an ordinary collector to have in duplicate, if he had not had some special reason for possessing them.

[1] I must sincerely thank Dr. Jentink for the care and trouble that he has taken in helping me to trace out the history of this collection, and, among other things, for having lent me a copy of this rare sale-catalogue, as well as a marked copy of Lidth de Jeude's own catalogue.

This being all the historical evidence that I have been able to gather about the Seba and Lidth de Jeude collections, I need scarcely say that I shall be most grateful to anyone who may happen to find any pertinent references to either of them and who would give me information thereof.

To pass now to the evidence derived from the specimens themselves and their agreements with the Seba's descriptions and figures.

In the first volume of Seba's work about 90 Mammalia are figured and described, and 7 in the second. Of these we must eliminate those that were probably among the Paris set (see below), besides a considerable number more which, owing to their size, could not have been preserved in spirit, and such again as Seba states were not in his own collection. This would leave some 70 or 80 for which originals may be sought. Many of these are of animals so rare, even to the present day, that their independent possession both by Seba and Lidth de Jeude would itself be unlikely; and still more unlikely that the specimens belonging to the latter should have been able so closely to match the figures given by the former, in age, size, and above all in sex, a point on which Seba was fortunately very careful to give particulars.

Of the cases put forward in the following list, some few depend of course merely on an ordinary specific resemblance, and one can only say that there is no disqualifying point, such as wrong sex or age; but in others, and indeed in the majority, there is a strong imdividual resemblance between the figure and the specimen, often confirmed by some collateral evidence extracted from Seba's descriptions. Such cases as those of the Opossums with their varying numbers of mammæ visible or in use, of the *Lutra brasiliensis* with its wrinkled sides, and of the pair of *Tamias* with the right sexes and number of stripes respectively, are far beyond anything that one could possibly suppose might be due merely to accidental coincidence.

In the table now exhibited (pp. 314–15) the first column gives the number of the plate and figure in Seba, the second the name of the species, and the third the British Museum register-number of the specimen I assign to the figure. These specimens will of course always be open to the inspection and comparison of anyone interested in the subject.

It is unfortunate that, before the history of the collection was suspected, many of the specimens were taken out for examination and rebottled in modern bottles, but in all cases the fact of their having actually come from the Lidth de Jeude collection is beyond question. Without such taking out, however, exact specific determination is occasionally very difficult, and some animals are therefore inserted in the table merely under their generic names, as without very special reason it would not be right to unseal the ancient and interesting bottles which contain them.

Seba, Plate and Figure.	Name.	Museum register-no. of Lidth de Jeude specimen.	Remarks.
Vol. I.		67.4.12	
XXXI. 1.	*Didelphys murina*, ♂.	541	
,, 2.	*Didelphys murina*, ♀.	542	Mammæ said to be 7 or 9 in text, but only shown as 7 in plate. Specimen with 9 in use, but only 7 easily visible. Full number 11.
,, 5.	*Didelphys murina*, ♀, and 6 young on back.	546	Specimen with 7 young, but the artist has represented as many as he could get in. Mother and young were all in one Lidth de Jeude bottle together, but unfortunately they were all taken out in 1887 and stuffed.
,, 6.	*Didelphys brevicaudata*, ♀.	540	
XXXII. 1.	*Talpa europæa.*	558	Common albino variety; several in the collection.
,, 5.	*Chrysochloris aurea.*	564	Rare species.
XXXIII. 2.	*Bradypus cuculliger.*	579	
XXXVI. 4.	*Didelphys philander*, ♀.	414	Four prominent mammæ drawn. *Specimen has* 4 *developed out of the full number of* 7. The same bottle also contains several young specimens very fairly corresponding to the letterpress of XXXVI. 3. "On y voit aussi plusieurs petites femelles, dont les petites bourses sont étroitement fermées."
XL. 2.	*Procyon cancrivorus*, juv.	455	
XLI. 1.	*Herpestes griseus.*	452	"From Ceylon." Specimen kept alive; no doubt drawn from life and then, as specially mentioned, drowned and placed in preserving fluid.
,, 3.	*Sciuropterus volucella*, ♂.	494	From Virginia.
XLII. 1.	*Nasua rufa*, imm.	447	Received alive from Surinam.

„ 2.	*Lutra brasiliensis*, juv.	445	The figure shows a series of peculiar transverse stripes on the flanks. The specimen has been compressed into too small a bottle, and has had a number of marked transverse wrinkles formed along its sides thereby. "Conservé dans une liqueur."
XLVII. 2.	*Tamias asiaticus*, ♂.	479	The extraordinary tail of the figure is of course an impossibility for this or any other specimen. But the floating out in bundles of the long hairs of the tail in the liquid may have given rise to the idea that the tail itself was "fendu en quatre." In other respects the figure and description agree remarkably well with this specimen.
„ 3.	*Tamias striatus*, ♀.	491	This and the last make a very noticeable pair of correspondences to the two Chipmunks figured by Seba.
XLVIII. 2.	*Felis tigrina*.	450	
XLIX. 1 & 2.	*Erinaceus europæus*, imm.	555	"De nos pais."
„ 4 & 5.	*Erinaceus*, sp., ♂.	557	"De Sibérie."
L. 3.	*Babirusa alfurus*, skull.	223	This skull precisely agrees with the figure in the relative development of the four long tusks, which are extremely variable in length.
LV. 1.	*Noctilio leporinus*, ♂.	339	
2.	*Hemiderma brevicaudatum*, ♀.	597	Determined of course from the specimen, but the agreement is very close.
LVI. 2.	*Kerivoula picta*, ♀.	343	From Ternate.
3.	*Kerivoula picta*, ♂.	342	These two specimens, male and female, are the only two in the collection.
LVII. 2.	*Pteropus vampyrus*, ♂.	325	Said by Seba to be from Ternate. Specimen determined by Dobson as *Pt. "edulis,"* a native of that island. (For nomenclature see next page.)
Vol. II.			
VIII. 3.	*Sorex*, sp.	570	Specimen apparently *S. vulgaris*.
LXIII. 5.	*Crocidura*, sp.	569	

Besides these cases there are a large number of instances, such as the young Opossum figured on Plates XXXI. & XXXVI., where although it is impossible to fix on individual specimens as their originals, yet practically the Lidth de Jeude collection does contain specimens fairly corresponding with them. Further research again will, I hope, reveal some few more cases of close identities, as I cannot feel that I have by any means exhausted the possibilities in this direction.

It would appear certain, then, that so large a number of resemblances as the above cannot be merely an accident, especially when some of the more remarkable cases are taken into account, and I can, therefore, only reiterate my belief that these are the actual specimens from which Seba took his figures.

But besides its extreme interest, this fact has a special scientific importance, for in many cases systematic names have been given, primarily or solely, to Seba's figures, and therefore, where the originals of these figures can be identified, the specimens are clearly the types of the species.

The tracing of such names, however, can only be properly done in connection with the systematic working out of the different groups, and the following cases are therefore only those of which I now have clear evidence and are perhaps but a small proportion of those which really exist.

Names of Species founded on Seba's figures, for which typical specimens have been identified.

Chrysochloris aurea[1], Zimm. Geogr. Gesch. ii. p. 391 (1780). Founded on Seba, XXXII. 4 & 5.
Specimen 67.4.12.564.

"*Vespertilio*" *vampyrus*[2], Linn. Syst. Nat. (10) p. 31 (1758). Founded on LVII. 1 & 2.
Specimen 67.4.12.325. *Pteropus edulis*, spec. *g*, Cat. Chir. B. M. p. 51.

Kerivoula picta, Pall. Spic. Zool. iii. p. 7. Founded on LVI. 2 & 3.
Specimens 67.4.12.342–3. *l*[3] of Cat. Chir. B. M. p. 334.

Noctilio leporinus, Linn. Syst. Nat. (10) i. p. 32 (1758). Founded on LV. 1.
Specimen 67.4.12.339. *f* of Cat. Chir. B. M. p. 396.

Didelphys philander, Linn. *t. c.* p. 54. Founded on XXXVI. 4.
Specimen 67.4.12.414. *g* of Cat. Mars. p. 338.

Didelphys murina, Linn. *t. c.* p. 55. Founded on XXXI. 1 & 2.
Specimens 67.4 12.541 & 2. *x* and *z* of Cat. Mars. p. 347.

Didelphys dorsigera, Linn. *l. c.* Founded on XXXI. 5.
Specimen 67.4.12.546. *f'* (of *D. murina*) Cat. Mars. p. 347.

Didelphys brevicaudata, Erxl. Syst. R. A. p. 80. Founded on XXXI. 6.
Specimen 67.4.12.540. *b* of Cat. Mars. p. 358.

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[1] Linnæus's name "*asiatica*" is equally founded on this specimen, but, being erroneous, is not admissible.

[2] This will affect the name of the species, which will have to stand as *Pteropus vampyrus*, L. Even if the identification of the specimen is wrong, however, Seba's LVII. 1 & 2 clearly represent what has been known as *Pt. edulis*, Geoff., so that the change would have to take place in any case.

[3] The male specimen accidentally omitted from the list in the Catalogue.

Finally, in order to focus as far as possible all the existing information about the Seba cabinet, I have thought it well to reproduce just as it stands the list, obligingly hunted out for me by Prof. Milne-Edwards, of the specimens taken to Paris. The numbers placed in brackets are those of the Seba plates and figures which *may* be those of the specimens mentioned. How many of these interesting specimens still remain in the Paris Museum after the lapse of nearly a century, I will leave my *confrères* of that great institution to determine; but I am afraid there cannot be many, as the specimens seem to have been for the most part perishable skins or stuffed specimens.

Liste des animaux envoyés de la Haye l'an III.[1] *de la République Française.*

(Cabinet du Stathouder.)

Un Hippopotame adulte.
Un Hippopotame jeune.
Une tête de Narwal avec la corne.
Un Fourmilier de Cayenne [XXXVIII. 2, XL. 1, or Vol. II. XLVII. 2].
Un Pangolin [LIV. 1].
Un Singe nasique.
Un Tatou[2] [XXXVII. 2].
Portion de crâne et cornes de Coudou.
Deux peaux de Coudou, ♂ ♀.
Deux peaux du Buffle bleu du Cap.
Trois peaux de Chat-tigre.
Une peau de Rhinocéros bicorne (jeune).
Deux peaux de Bubale, ♂ ♀ [XLII. 4].
Un Tapir.
Un Gerboise de la grande espèce.
Un Cochon sanglier sauvage de Surinam [? L. 2].
Un petit Singe d'une espèce particulière [? XLVII. 1].
Une Loutre blanche.
Un Renard blanc.
Deux Gerboises de la moyenne espèce.
Deux Gerboises de la petite espèce [? II., XXIX. 2].
Un Faisan perlé de la Chine.
Des peaux d'Antilopes.
Un Éléphant avec son poil follet.
Un Sanglier du Cap qui a vécu à la Haye.
Un Daim du Cap.
Une sorte de Renard [? XXX. 1].
Un Cerf du Cap.
Un Castor de Westphalie.
Deux têtes de Babouines à dents dorées.
Un Paresseux de haute taille [XXXIV. 1].
Une jolie Chèvre de Surinam [? XLII. 3].
Des Écureuils volants.
Un Bouquetin.
Une tête de Rhinocéros à doubles cornes.

Some Reptiles were also taken, as several of Seba's specimens are known to be in the Paris Museum.

[1] Sept. 1794 to Sept. 1795.
[2] See I. Geoff. C. R. xxiv. p. 572 (1847).

Adding to this list the Royal Antelope (*Nanotragus pygmæus*), said by Temminck to be possibly the original of XLIII. 2, and the specimens asserted by Sundevall to be perhaps those of XLIII. 1 & 2[1], we are able to account, with the Lidth de Jeude specimens now in the British Museum, for a very large proportion of Albert Seba's historical collection of Mammalia.

3. Descriptions of new Species of Lepidoptera Heterocera from Brazil, Mexico, and Peru.—Part II.[2] By W. SCHAUS, F.Z.S.

[Received April 29, 1892.]

The following descriptions are all taken from specimens in my own collection, and, with the exception of those from Peru, they were collected by myself.

Fam. LASIOCAMPIDÆ.

ORMISCODES OPIS.

Primaries above reddish brown; a basal straight, and an outer oblique, transverse grey band; a marginal wavy whitish shade; a long white streak at the end of the cell. Secondaries reddish brown; a median transverse greyish band and a submarginal dark brown shade. Underneath brown, the outer portion of the wings crossed by four bands of whitish scales. Head and thorax reddish brown. Abdomen black dorsally, whitish between the segments; anal segment red; underneath reddish brown.

Expanse 100 mm. ♀.

Hab. Petropolis, Brazil.

LONOMIA CARNICA.

Male. Above red, the wings crossed from the apex of the primaries to the middle of the inner margin on the secondaries by a broad black line, divided by a greyish shade; on the primaries two discal spots, the anterior one blackish, the posterior one white. Underneath pale brownish red, with broad, marginal, paler shades; the transverse line very narrow and indistinct, inwardly shaded with white; on the primaries two white discal spots; on the secondaries a black discal spot circled with white; a large black spot at the apex.

Expanse 80 mm.

Hab. Petropolis, Brazil.

PREPTOS, nov. gen

Antennæ minutely pectinated, and with ong tufts of hairs at

[1] Pecora, p. 303 (1847). I have to thank Prof. W. Leche, of Stockholm, for information about the present condition of these specimens. See also Brooke, P. Z. S. 1872, p. 637.

[2] For Part I. see above, p. 272.

their base. Palpi very short, woolly, descending. Abdomen stout, not extending beyond the secondaries. Primaries broad, straight along the costal margin to near the apex, then convex; outer margin straight, the inner angle very convex. Secondaries with the costal margin very slightly convex; the outer margin convex. The discal cells very short, not extending beyond a third from the base.

PREPTOS OROPUS.

Fawn-colour, the outer margins broadly brown and separated from the ground-colour by a straight dark line, extending from the apices to the inner margins near the angles on both the primaries and secondaries; a median and on the primaries also an outer transverse dark wavy shade; a blackish spot on the subcostal vein of the primaries near the base. Underneath yellowish fawn-colour; a median and a submarginal dark brown, lunular, transverse band, and between these three similar but less distinct bands. Head and thorax pale fawn-colour. Collar dark brown. Abdomen dark fawn-colour.

Expanse 95 mm. ♀.

Hab. Jalapa, Mexico.

LEBEDA DOERI.

Male. Dark brown, reddish grey about the inner angle of the primaries, with three small black spots; the primaries also crossed by four pale lines, the inner two straight, the outer two slightly oblique; a small white point in the cell. Underneath brown flecked with greyish scales; two transverse pale lines from the costal margin of the primaries near the apex to the inner margin of the secondaries.

Expanse 75 mm.

Hab. Petropolis, Brazil.

ARTACE ANULA.

Female. Primaries above whitish with transverse greyish streaks, and a circular grey spot on the inner margin. Secondaries above greyish white, with a broad submarginal dusky band. Underneath grey, with a white marginal line. Body greyish.

Expanse 43 mm.

Hab. Rio Janeiro, Brazil.

ARTACE MERIDIONALIS.

Female. Primaries above white, with a basal, a median, and an outer row of dark grey spots on the veins, and two grey spots at the end of the cell; a marginal and a submarginal dusky grey transverse band, and a row of black spots on the extreme margin between the veins. Secondaries above grey, darker along the inner margin. Underneath: primaries grey, with the apex white and a row of dark spots on the extreme margin; secondaries grey, with the fringe white. Head and thorax grey. Abdomen dorsally dark grey, underneath white.

Expanse 44 mm.
Hab. Tijuca, Rio Janeiro.
Most nearly allied to *A. albicans*, Walker.

HYDRIAS THERESA.

Primaries above grey, the veins black towards the outer margin and some black scales at the base; two black points in the cell, and beyond the cell two transverse blackish lines, the inner one resembling a line of fish-scales, the outer one forming prolonged angles. Secondaries brown, the costal margin broadly grey, mottled with black; a marginal wavy, dusky grey line and a faint trace of a median transverse line. Head and thorax grey. Abdomen brown, grey subdorsally.
Expanse 35 mm.
Hab. Rio Janeiro, Brazil.

HYDRIAS BOCHICA.

Primaries light grey, the base brown with two contiguous wavy, brown, transverse lines; a black discal spot; beyond the cell another double transverse streak, and a submarginal row of brown spots; a brown spot on the costa near the apex; the outer margin brownish except at the apex and the inner angle. Secondaries with the costal and outer margins greyish; the inner margin and disk brown; two transverse wavy brown lines. Body brownish grey.
Expanse 38 mm.
Hab. Peru.

HYDRIAS BRAGANZA.

Male. Primaries above white; brown along the inner margin and posterior half of the outer margin, also a brown spot on the costal margin close to the apex, and a smaller spot near the base. Secondaries above brown, the costal margin broadly white. Underneath brown; a marginal wavy white line at the apex of the primaries, and a short broad white band at the apex of the secondaries. Head brownish. Thorax brown in the centre, on either side white. Abdomen brown.
Expanse 34 mm.
Hab. Rio Janeiro, Brazil.

HYDRIAS LACRIMOSA.

Male. Primaries above brown; a greyish basal transverse streak, also a similar outer wavy transverse streak, beyond which on the anterior half of the wing is a submarginal whitish band; a marginal broken white line from the apex to the inner angle. Secondaries light brown, darker along the costal margin and mottled with buff; a median and a marginal indistinct transverse line. Underneath light brown; beyond the cell the wings are crossed by three darker transverse lines. Body brown.
Expanse 26 mm.
Hab. Petropolis, Brazil.

HYDRIAS SORDIDA.

Male. Primaries above brown, slightly mottled with greyish scales; a transverse outer lunular line and a submarginal deeply angular black line. Secondaries rich brown; the costal margin mottled with greyish, and an indistinct wavy marginal line. Body brown; a few greyish hairs on the thorax.

Expanse 30 mm.

Hab. Petropolis, Brazil.

TALIMA CARMEN.

Male. Primaries above grey, brownish along the inner margin, whitish at the apex; beyond the middle of the wing a semicircular row of small black spots; an upright white streak on the inner margin near the angle. Secondaries above bright red; apex and fringe greyish brown. Wings underneath red; the costal margins and apices grey. Head and thorax grey. Abdomen red dorsally, grey underneath.

Expanse 23 mm.

Hab. Petropolis, Brazil.

Fam. LIMACODIDÆ.

ECHEDORUS ARGENTINA.

Male. Wings grey, slightly hyaline and iridescent, the outer third slightly paler in colour. The primaries crossed at a third from the base by two outwardly curved, narrow, whitish lines; beyond the cell two wavy whitish lines and a wavy marginal whitish band; a small black spot at the end of the cell. Underneath, the primaries are almost denuded of scales, and show the markings of the upper surface. The secondaries above have the dark and light portions separated by a faint whitish shade, the darker portion occupying the entire inner margin; underneath, a broad median, transverse, black band, shaded with white on either side. Thorax and abdomen dark grey, with tufts of brownish hairs at the base of the wings; also similar tufts on the last segments underneath.

Expanse 43 mm.

The female is altogether more woolly, the primaries are hardly iridescent, the markings a little less distinct, and the black spot at the end of the cell more conspicuous. The secondaries are uniform dull grey.

Expanse 60 mm.

Hab. Petropolis, Brazil; Buenos Ayres.

TITYA FUMIDA.

Male. Wings smoky brown; a black spot at the end of the cell on the primaries, and a submarginal greyish band, more distinct on the primaries than on the secondaries. Body brown.

Expanse 38 mm.

Hab. Petropolis, Brazil.

TITYA ARGENTATA.

Female. Primaries above silvery white, the margins and fringe finely brown; a broad brown band from the middle of the inner margin to the costal margin near the apex. Secondaries brown. Underneath, all the wings brown. Body brown, reddish brown towards the anal segment.

Expanse 52 mm.

Hab. Rio Janeiro.

MEGALOPYGE RADIATA.

Brown, the basal half of the primaries below the median vein much darker and outwardly bordered with white, whence white lines extend towards the outer margin; at the end of the cell a large velvety brown spot; beyond the cell white lines radiate towards the apex and outer margin. Secondaries brown. Body brown. Head behind the antennæ white.

Expanse 54 mm. ♀.

Hab. Petropolis, Brazil.

MEGALOPYGE ACCA.

Primaries above pinkish brown; a blackish median transverse line. Secondaries roseate. Underneath roseate, the apices of the primaries brownish. Head and thorax brownish. Abdomen red.

Expanse 30 mm. ♂.

Hab. Rio Janeiro.

DALCERA TIJUCANA.

Primaries yellowish white, faintly reddish along the outer and inner margins and through the centre of the wing; fringe yellow; a black oblique line at the end of the cell, and a black shade along the median vein. Secondaries bright yellow. Head orange, collar yellow, thorax pinkish, and abdomen dorsally yellow; underneath orange. The wings underneath are yellow, with a small black mark at the end of the cell on the primaries.

Expanse 35 mm.

Hab. Tijuca, Rio Janeiro.

PINCONIA COA.

Orange, all the veins on the primaries outlined with yellow, more distinctly so in the male than in the female.

Expanse, ♂ 33 mm., ♀ 44 mm.

Hab. Coatepec, Jalapa, Mexico.

PARASA MINIMA.

Primaries light brown; a transverse median green band, widening on the inner margin to the base of the wing; a submarginal wavy, darker brown shade; the veins on the outer margin finely outlined with darker brown. Secondaries very light brown, somewhat darker

along the outer margin. Head and thorax light green. Abdomen brown.

Expanse 19 mm.

Hab. Coatepec, Mexico.

TRABALA CICUR.

Male. Primaries reddish yellow, the veins slightly darker; a darker basal streak along the median vein, and below this an irregular darker shade curving round it towards the apex; a marginal darker shade. Secondaries and abdomen reddish yellow. All the fringes very long.

Expanse 34 mm.

Hab. Corcovado, Rio Janeiro.

TRABALA DRUCEI.

Wings and body bright brownish yellow. On the primaries a brown, slightly curved streak from about the middle of the inner margin to the costal margin, very close to the apex; a dark marginal line.

Expanse, ♂ 30 mm., ♀ 36 mm.

Hab. Jalapa, Mexico.

This species was described and figured in the 'Biologia Centrali-Americana' as the female of *Vipsania anticlea*, Druce.

TRABALA CEBRENIS.

Primaries light green, a large brown space occupying the basal half of the wing above the median vein; the outer margin and part of the inner margin light brown, with a greyish marginal streak. Secondaries brown, slightly blackish along the outer margins. Head and thorax light green. Abdomen brown.

Expanse 28 mm. ♀.

Hab. Coatepec, Mexico.

TRABALA BRUMALIS.

Primaries above brown, darkest along the costal margin; the basal half of the median vein blackish; below this an indistinct whitish line curving upwards to the apex; beyond this a submarginal greyish shade, and then a marginal whitish shade from the apex to the middle of the inner margin; the extreme margin and fringe brownish. Secondaries light brown, thickly speckled with darker scales. Body brown; two light streaks on the head and thorax.

Expanse 42 mm. ♀.

Hab. Petropolis, Brazil.

VIPSANIA FRIGIDA.

Primaries light brown, faintly tinged with pinkish; a pale olive-green patch at the base of the costal margin, including a minute brown spot; from the base of the wings, following parallel with the inner margin for a short distance and then extending to the costal margin close to the apex, an olive-green irregular line, partly shaded

with yellowish green. Secondaries brown, slightly reddish along the inner margin. Head and thorax light greenish yellow. Abdomen dull reddish.

Expanse 29 mm.

Hab. Las Vigas, Mexico.

NYSSIA SULLA.

Primaries light reddish brown, faintly tinged with violaceous along the outer margin; a submarginal row of black points on the veins, connected by a faint black line. Secondaries yellowish white, brown at the anal angle and partly along the inner margin. Body brown; abdomen yellowish laterally and underneath.

Expanse 21 mm.

Hab. Petropolis.

NEOMIRESA COPAC.

Primaries dark cinereous brown; a basal, a median, and a submarginal transverse, wavy, darker shade; a small black point in the cell; a small olive-green spot above the submedian vein; the fringe brown with darker spots. Secondaries paler, except along the inner margin. Body dark cinereous brown.

Expanse 24 mm.

Hab. Peru.

AMYDONA SERICEA.

Primaries light brown, having a silky and wavy appearance, and shaded with darker brown, especially at the base, at the end of the cell, and submarginally. Secondaries brownish yellow. Thorax shaded with dark brown. Abdomen light brown, somewhat reddish brown dorsally.

Expanse 35 mm.

Hab. Peru.

SEMYRA STRAMINEA.

Female. Primaries reddish brown, the veins finely brownish; the inner margin and part of the outer margin purplish; two indistinct dark wavy lines from the base of the wing to the costal margin near the apex. Secondaries purplish brown, yellowish along the costal margin. Body purplish brown.

Expanse 27 mm.

Hab. Rinconada, Vera Cruz, Mexico.

EULIMACODES MÖSCHLERI.

Wings brown, the primaries with a quadrate darker space occupying the basal half of the wing below the median vein and including a small reddish and two minute white spots; a darker streak in the cell, and a subapical darker shade, beneath which are two or three small dark streaks. Body brown.

Expanse 23 mm.

Hab. Jalapa, Mexico.

Very similar in its markings to *Eulimacodes distincta*, Möschler, but a much smaller insect.

TARCHON MINOIS.

Primaries above dark reddish brown, the costal margin narrowly luteous; a black point in the cell; an outer transverse dark shade and a submarginal dark wavy line: underneath with the disk dark brown, the margins broadly light reddish brown. Secondaries above dark brown, the fringes golden brown: underneath light reddish brown; a black point in the cell, and two dark wavy transverse lines. Body dark brown above, underneath light reddish brown.

Expanse 28 mm.

Hab. Petropolis, Brazil.

Fam. BOMBYCIDÆ.

HYGROCHROA LIMOSA.

Primaries above silvery grey, light reddish brown along the inner margin, and finely so on the costa; an outer and a submarginal transverse wavy black line; a dark shade along the anterior half of the outer margin. Secondaries bronze-grey, darker along the outer margin; on the inner margin some dark brown and whitish spots. Body grey.

Expanse 26 mm. ♂.

Hab. Corcovado, Rio Janeiro.

TAMPHANA, nov. gen.

Antennæ deeply pectinated, as long as the thorax. Abdomen extending beyond the wings and laterally tufted. All the legs with tufts. Primaries long, not very broad, straight along the costa, slightly convex at the apex, outer margin slightly convex. Secondaries with the anal angle slightly prolonged, and the outer margin somewhat excavated close to the anal angle.

TAMPHANA MARMOREA.

Primaries above light brown, finely striated with dark brown; the costal margin paler; a broad basal transverse greyish band; a minute greyish spot in the cell; an outer transverse, double, wavy brown line; a large apical space on the costal margin whitish crossed by a greyish shade; a dark spot on the inner angle: underneath light brown, whitish at the apex. Secondaries above brown, with a dark spot about the middle of the inner margin: underneath light brown, with two dark transverse streaks.

Expanse 27 mm. ♂.

Hab. Palmeiras, Rio Janeiro.

AROTROS, nov. gen.

Female. Antennæ longer than the thorax, pectinated. Palpi short, tufted. Abdomen stout, the anal segment with long stiff

hairs. All the legs tufted. Primaries broad, the apex rounded, the outer margin very convex.

AROTROS STRIATA.

Wings buff, all the veins and lines between the veins brown. The primaries with the base and half of the costal margin dark grey. Head dark grey. Collar brown, with dark margins. Thorax and abdomen buff, the latter with numerous longitudinal dark streaks.

Expanse 45 mm.

Hab. Novo Friburgo, Brazil.

OLCECLOSTERIA MAYA.

Primaries above very light grey, an indistinct basal and outer transverse shade, beyond the latter a row of minute spots on the veins; a subapical, small, quadrate vitreous spot; the fringe on the middle of the outer margin dark brown; a minute black spot in the cell. Secondaries pale brownish grey. Underneath brownish grey, somewhat darker on the outer margin of the primaries below the apex; a submarginal brown line and a median brownish shade on all the wings; a fine transverse streak in the cell on the primaries. Body above grey; underneath light brownish grey.

Expanse 35 mm.

Hab. Jalapa, Mexico.

OLCECLOSTERIA MUTUSCA.

Male. Primaries above light grey, speckled with blackish scales, the apices darker; a basal and a median transverse dark wavy line; an outer row of minute black points on the veins, and a very small subapical round vitreous spot. Secondaries brownish, with two dark transverse lines. Underneath greyish brown, the apices of the primaries darker; the outer line on the secondaries forming numerous acute angles, also a small black point in the cell.

Expanse, ♂ 32 mm., ♀ 44 mm.

Hab. Rio Janeiro.

Very similar to *Olceclosteria microps*, Walker, but differs in its colour, the vitreous spot and the outer line on the secondaries underneath.

Fam. DREPANULIDÆ.

PEROPHORA CORCOVADA.

Apices of primaries not prolonged. Primaries above grey, tinged with reddish at the base, and with brown on the costal margin near the apex; a blackish submarginal line outwardly shaded with reddish brown; a vitreous spot at the end of the cell. Secondaries above with the base grey; a transverse median black line, beyond which the wing is reddish brown, except the extreme outer margin, which is grey; a small vitreous spot as on the primaries. Underneath grey speckled with black; the disk of the primaries reddish,

also a large red space on the outer margin of the primaries. Body brownish grey.

Expanse 44 mm.

Hab. Corcovado, Rio Janeiro.

PEROPHORA ACUTA.

Primaries with the apices very much prolonged. Wings light grey, speckled with black; a black spot in the cell on the primaries; on the costal margin of the same wings, at about three fourths from the base, a faint brown oblique line, which forms a sharp angle and extends to the middle of the inner margin on the secondaries. Body grey, speckled with black.

Expanse 42 mm.

Hab. Petropolis, Brazil.

Fam. COSSIDÆ.

COSSUS PARILIS.

Primaries above black, covered with a network of velvety black lines and striæ, the most conspicuous forming an extra-basal and a marginal transverse line; all these velvety black lines are finely bordered with brownish scales: underneath blackish, the costa and the outer margin greyish, with darker spots and striæ. Secondaries above whitish, with numerous transverse indistinct striæ; the inner margin broadly black: underneath almost the same, but without the dark inner margin. Thorax and abdomen black, with a few brown and grey scales.

Expanse 45 mm.

Hab. Rio Janeiro, Brazil.

COSSUS HORRIFER.

Black, the primaries above with a few velvety black lines, chiefly along the costal margin; a broad basal line, posteriorly bifurcated, and a submarginal irregular line not reaching the inner margin; the outer margin with numerous deep black striæ. The secondaries above brownish black, with a few indistinct darker lines. Underneath, the wings are dark grey, covered with blackish striæ; the disk of the primaries with long black scales. Antennæ more deeply pectinated than in *Cossus parilis*, Schaus.

Expanse 70 mm.

Hab. Rio Janeiro.

COSTRIA ABNOBA.

Primaries above dark silvery grey, the outer margin broadly brown, with darker brown spots; a basal small brownish shade; a large, round, whitish discal spot. Secondaries above brown. Underneath greyish brown, the extreme margins spotted with dark brown; the apices with a small yellowish space. Head and thorax in front dark velvety brown, thorax otherwise silvery grey. Abdomen brownish above, light grey underneath.

Expanse 66 mm.

Hab. Palmeiras, Rio Janeiro.

Dolecta juturna.

Primaries above grey, with large black spots edged narrowly with luteous, three between the median and submedian veins, one in the cell, another beyond the cell, three near the outer margin and three subapical, also some smaller spots along the costal margin. Secondaries greyish white, blackish at the base; a marginal row of blackish spots and a submarginal dark irregular band.

Expanse 63 mm.

Hab. Rio Janeiro.

Dolecta macrochir.

Primaries light brown, covered with a network of yellowish-white lines, dividing the ground-colour into a mass of small spots; a few of the spots are dark velvety brown, chiefly on the margin, and the largest spot of all is submarginal, about the middle of the wing. Secondaries paler, and consisting of indistinct brownish spots and striæ; underneath, the markings on the secondaries are more distinct. Body brown.

Expanse 46 mm. ♂.

Hab. Rio Janeiro.

Dolecta invenusta.

Primaries light grey; a few dark spots on the costal margin; a short dark streak below the median vein at the base; a dark oblique shade beyond the cell; a broad, subapical oblique spot; wavy, longitudinal, dark lines along the outer margin between the veins; the fringe with large black spots. Secondaries dark grey; the fringe paler, with dark spots as on the primaries. Underneath dark grey, consisting of numerous striæ; the fringe spotted as on the upper side.

Expanse 45 mm. ♀.

Hab. Rio Janeiro.

Cossula notodontoides.

Primaries above with almost the entire basal half yellowish white, shading beyond from light brown to very dark violet-brown; along the outer margin are a few paler spots and a few very dark longitudinal streaks. Secondaries above brownish. Head and thorax whitish. Abdomen brownish.

Expanse 50 mm.

Hab. Rio Janeiro.

Cossula præclara.

Primaries above whitish, the costa finely dark brown; a basal, a median, and an outer transverse steel-grey band, the median band being the widest; along the inner margin numerous shorter grey streaks; on the outer margin two large, round, deep red spots. Secondaries brown. Head and thorax grey. Abdomen brown.

Expanse 45 mm.

Hab. Novo Friburgo, Brazil.

Langsdorfia polybia.

Light greyish brown, the primaries with a large whitish space occupying the outer portion of the wing; apex and outer margin, however, greyish brown; a quadrate whitish space below the median vein; here and there a few dark striæ. Underneath, the secondaries almost entirely whitish, and on all the wings widely separated dark striæ.

Expanse 40 mm.

Hab. Petropolis, Brazil.

Allied to *Langsdorfia forreri*, Druce.

Givira tecmessa.

Primaries above violaceous brown, with interrupted transverse rows of small darker spots; the basal half of the inner margin broadly velvety brown. Secondaries whitish, the outer margins broadly blackish. Length of body 14 mm.

Expanse 42 mm.

Hab. Corcovado, Rio Janeiro.

Givira philomela.

Primaries whitish grey, darker along the inner margin and at the apex, and crossed by numerous short dark lines; a black spot at the end of the cell. Secondaries dark grey. Body light grey, the base of the abdomen somewhat darker. Length of body 13 mm.

Expanse 37 mm.

Hab. Corcovado, Rio Janeiro.

Zeuzera ramosa.

Male. Primaries above with the costal margin dark brown from near the base to the apex; a light brownish space occupying the cell and extending somewhat beyond it; from the middle of the median vein to the centre of the outer margin an irregular black line; the base, inner margin, and outer margin otherwise white with transverse black striæ. Secondaries above white, with a few blackish striæ along the outer margin. Body whitish, speckled with black.

Expanse 41 mm.

Hab. Rio Janeiro.

Closely allied to *Eudoxyla strigillatu*, Felder.

Fam. Hepialidæ.

Dalaca prytanes.

Primaries greyish brown, with some white streaks along the costa; a short, oblique, dark brown basal streak edged with whitish; a dark brown shade, enclosing some small silvery marks, from the end of the cell to near the inner angle; a submarginal, transverse, brownish band, darker where contiguous to the above mentioned dark shade; the primaries otherwise crossed by indistinct transverse

lines. Secondaries and body brown. Underneath brownish, the costal margins luteous with dark grey spots.

Expanse 33 mm.

Hab. Petropolis, Brazil.

DALACA MUMMIA.

Very light grey, with an outer and a submarginal paler transverse band; the submarginal band is formed of contiguous quadrate spots.

Expanse 40 mm.

Hab. Petropolis, Brazil.

DALACA OREAS.

Primaries dark brown, indistinctly mottled with slightly paler lines; a small dark shade and two minute silver spots beyond the cell; an outer transverse dark line and three silver spots on the outer margin below the apex. Secondaries and abdomen brown. Head and thorax velvety brown. Underneath dull brown.

Expanse 43 mm.

Hab. Petropolis, Brazil.

DALACA TEREA.

Primaries pale fawn-colour with a reddish tinge; a small dark streak at the end of the cell, beyond which is an interrupted transverse dark line; otherwise with numerous short, transverse, pale streaks outwardly bordered with brownish. Secondaries and body very light reddish.

Expanse 42 mm.

Hab. Paso de San Juan, Mexico.

PHASSUS ABSYRTUS.

Male. Light reddish brown, the primaries crossed beyond the middle by four darker bands from the costal margin to the median vein; darker shades and light wavy streaks about the inner angle and along the inner margin. The female has the bands less distinct and crossing the entire wing.

Expanse, ♂ 63 mm., ♀ 85 mm.

Hab. Petropolis, Brazil.

Fam. NOTODONTIDÆ.

CŒLODASYS TONAC.

Female. Primaries light grey; a short oblique black line at the base; some dark greyish lines on the costa, and long grey lines between the veins on the outer margin, a large dark spot at the end of the cell, from beneath which a large oblong dark space extends towards the outer margin just above the inner angle. Secondaries whitish, with the outer margin broadly shaded with dark grey. Underneath whitish, the primaries with the costal margin and apex broadly grey. Body greyish.

Expanse 40 mm.

Hab. Paso de San Juan, Mexico.

Cœlodasys pegasis.

Primaries above with the costa broadly buff, the inner margin violaceous brown, and the intermediate portion brown shaded with buff and violaceous; the base of the wing narrowly buff, limited by a transverse blackish line; at the end of the cell a short transverse brown streak, followed by several longitudinal brown streaks; the basal and outer transverse lines angular and indistinct; a submarginal series of small dark spots, and a marginal row of black points; the fringe alternately brown and buff. Secondaries brown, the fringe yellowish. Underneath brown, the fringe buff. Body brown, the collar edged with black.

Expanse 40 mm.

Hab. Petropolis, Brazil.

Œdemasia terrena.

Primaries fawn-colour, shaded with dark brown, darkest along the inner margin; a cluster of black scales below the middle of the median vein; halfway between this spot and the outer margin another similar spot resting on the posterior portion of a very indistinct, outwardly curved, and wavy pale line, which reaches from the costal to the inner margin; the outer margin with the veins dark, finely edged with buff; a series of oblique pale lines between the veins; a large pale space at the base of the primaries. Secondaries dark brownish grey. Centre of thorax and abdomen very dark cinereous. Thorax laterally and head light fawn-colour.

Expanse 50 mm.

Hab. Coatepec, Mexico.

Œdemasia maxtla.

Primaries fawn-colour, shaded with brown along the inner and outer margin; longitudinal brown lines on the outer half of the wing and a few pale oblique lines on the outer margin between the veins: at two thirds from the base an indistinct, pale, outwardly curved, transverse line, angular near the inner margin. Secondaries brownish, whitish towards the base. Head and thorax fawn-colour. Abdomen brownish dorsally.

Expanse 38–42 mm.

Hab. Coatepec, Mexico.

This species is very similar to *Œdemasia terrena*, Schaus, but may be distinguished by its paler colour and by the thorax, which has no dark markings.

Œdemasia guarana.

Primaries fawn-colour; a large basal space without markings; the median space shaded with brown, beyond which is a transverse, slightly curved, narrow, white band, divided by a blackish line; the outer third of the wing dark cinereous, except a small fawn-coloured space on the outer margin below the apex, a submarginal row of blackish marks, and a marginal row of similar but smaller spots;

the inner angle whitish. Secondaries brownish grey; the fringe luteous. Head and thorax fawn-colour. Abdomen dorsally brown.

Expanse 44 mm.

Hab. Corcovado, Rio Janeiro.

ŒDEMASIA INCA.

Primaries dark brown, slightly paler on the middle of the costal margin and at the inner angle; the median space crossed by several indistinct wavy lines from the costal to the inner margin; a marginal row of velvety brown dashes, inwardly shaded with fawn-colour. Secondaries whitish, with the veins brown and the outer margin broadly shaded with brown; an indistinct transverse row of brownish points on the veins. Body brownish above; underneath paler. The antennæ for half their length are twice as deeply pectinated as in any other species of *Œdemasia* known to me.

Expanse 45 mm.

Hab. Peru.

EDEMA MATHEIS.

Dark cinereous brown, except the apical third of the costal margin on the primaries, which is creamy white streaked with light brown; at a third from the base two parallel wavy dark lines from the costal to the inner margin, and beyond the cell two similar lines; a marginal wavy line. Underneath brownish grey; the apices of the primaries yellowish.

Expanse 40 mm.

Hab. Petropolis, Brazil.

EDEMA TLOTZIN.

Female. Primaries above light grey, with two median and an outer, nearly straight, transverse black lines; a submarginal black line, concave on its anterior half, angular posteriorly; the wings otherwise crossed by several angular greyish shades. Secondaries above white, with the costal margin and apical half of the outer margin broadly shaded with brown; the inner margin and outer margin towards the anal angle only narrowly shaded with brownish scales. Body brownish grey.

Expanse 40 mm.

Hab. Paso de San Juan, Mexico.

BLERA CAUSIA.

Primaries above with the basal half and a space extending towards the outer margin white with a few black scales; the outer portion of the wing otherwise light brown, here and there shaded with greyish scales, and separated from the white portion by a black line; there are two short, parallel, black streaks beyond the cell, starting from the subcostal vein; a submarginal, very angular black line; the terminal portion of the veins are blackish. Underneath white, broadly shaded with brown and grey towards the apex. Secondaries pure white, with a small brown streak at the anal angle on the

upper surface. Head and thorax light grey. Collar and abdomen brownish grey above. Underneath, abdomen white.

Expanse 48 mm.

Hab. Corcovado, Brazil.

Blera bianca.

Primaries above white, thinly speckled with brownish scales, broadly shaded with light brown at the apex, and there is a cluster of brownish scales at the inner angle; a very indistinct median and outer transverse brown line; two fine dark lines at the end of the cell; from the base of the costa to the inner margin, at one fourth from the base, two parallel black lines; a marginal, nearly straight heavy black line, having outwardly a black dash in the spaces between the veins; a submarginal wavy black line. Underneath white, shaded with black along the costal and outer margins. Secondaries above white, with the veins slightly blackish; underneath white. Head and thorax brownish grey. Abdomen light grey above, white below.

Expanse 45 mm.

Hab. Rio Janeiro, Brazil.

Blera apella.

Primaries above shining greyish brown, variegated with paler scales; an indistinct basal and median black transverse line, between which is a large cluster of white scales, confined between the median and submedian veins; a wavy, outer, transverse black line, within which is a large irregular, triangular, white space, situate on the costa and extending halfway across the wing, and enclosing at the end of the cell a black ring-shaped spot; a distinct submarginal wavy black line. Secondaries above brownish white at the base, dark brown along the outer margin. Underneath, the primaries are brown, shaded with grey; the secondaries yellowish white, with the costal and outer margins brownish. Body brownish grey.

Expanse 43 mm.

Hab. Corcovado, Rio Janeiro.

Blera sida.

Primaries above light brown, darker towards the base, with the basal and outer lines dark brown and very indistinct, the inner margin shaded with grey; a small oblong white spot near the base, below the median vein; a large white space on the posterior portion of the outer margin. Secondaries above light brown, the outer margin narrowly dark brown, the fringe whitish. Underneath, the primaries brownish, the secondaries white. Body grey above, whitish underneath.

Expanse 41 mm.

Hab. Corcovado, Rio Janeiro.

Heterocampa læca.

Male. Primaries above rich brown, mottled with greyish white;

the entire inner margin broadly greyish white; the outer margin also greyish white, with two clusters of brown scales; some grey shades along the costal margin and a large greyish space at the end of the cell; fringe grey, spotted with brown. Secondaries above dull brownish black, with a transverse pale shade from the middle of the costal margin to the anal angle; the outer margin outlined with dull brown; fringe yellowish grey. Underneath, the wings are dull brown, with paler shades chiefly along the outer margins. Head and collar reddish brown; thorax and extremity of abdomen grey; abdomen otherwise brown dorsally, grey underneath.

Expanse 48 mm.

Hab. Tijuca, Rio Janeiro.

HETEROCAMPA HERTHA.

Female. Primaries above light brown, with the base, the costal and inner margins mottled with grey; an indistinct, darker, transverse median line, and an outer triple transverse lunular line, beyond which and up to a submarginal black, wavy line the wing is leaden grey, with a dark streak in each space between the veins, and these streaks are outwardly surmounted by a cluster of brownish scales; the outer margin light brown. Secondaries above brown. Underneath yellowish white, thickly covered with brownish scales. Body grey-brown.

Expanse 50 mm.

Hab. Petropolis, Brazil.

HETEROCAMPA LIMOSA.

Female. Primaries above blackish, mottled with grey along the costal margin and towards the apex; all the transverse lines almost lost in the ground-colour; a submarginal wavy line fairly distinct; a short longitudinal black streak beyond the cell. Secondaries above whitish, the margins clouded with black, and a small black spot at the anal angle. Underneath, the secondaries are about the same; the primaries are dull black, with the costal and outer margins greyish. Body greyish.

Expanse 48 mm.

Hab. Corcovado, Rio Janeiro.

HETEROCAMPA VIRGEA.

Male. Primaries above dark olive-green, with the transverse lines dark brown shaded with lighter brown; at the end of the cell a small brown streak surrounded by a paler shade, and there are some paler spots along the submarginal line near the apex. Secondaries above light grey, with yellowish scales along the inner margin; the outer margin thickly clouded with black scales. Underneath, the wings are dirty white, the costal margin of the primaries being slightly spotted with grey. Head and thorax olive-green. Abdomen brownish, with darker clusters of scales subdorsally. Underneath, body dirty white.

Expanse 45 mm.

Hab. Petropolis, Brazil.

Heterocampa epona.

Primaries above dull greyish green, with a large grey space on the costal margin, from the middle of the wing to the marginal transverse line, which is wavy, brownish green; the basal and median lines rather indistinct; the outer line fine, lunular, dark grey; the extremities of all the veins brownish. Secondaries above light grey, with a brown transverse lunular line starting from the costal margin near the apex, but not extending far. Head and thorax dull greenish. Abdomen light brown, with somewhat darker subdorsal tufts.

Expanse 37 mm.

Hab. Peru.

Heterocampa atrax.

Male. Primaries above blackish grey, light grey at the base; some submarginal light grey shades; the fringe light grey spotted with black; the transverse lines black, very indistinct, being absorbed by the general ground-colour. Secondaries white, the inner margin with long dark hairs, the outer margin narrowly dark grey; the fringe whitish; the costal margin with some transverse dark grey shades. Head and thorax dark grey. Abdomen dorsally reddish brown at the base and extremity, otherwise dark grey. Underneath, body and primaries light grey. Secondaries white.

Expanse 52 mm.

Hab. Corcovado, Rio Janeiro.

Heterocampa perilleus.

Primaries above light brownish grey; a median wavy black line, preceded by a large blackish space, on the costal margin; the median space is crossed by an angular, dark grey line, and there are two small pale shades in the cell; the outer line is black, irregular, and followed by some broad dark brown shades; there is a marginal white shade, with inwardly a series of irregular black spots; a submarginal fine, lunular line; the fringe light grey, spotted with brownish grey: underneath blackish. Secondaries white, with the outer margin broadly dark grey; the extreme margin whitish, with the end of the veins dark grey and the fringe white; just above the anal angle a dark streak. Head and collar dark brown. Thorax grey. Abdomen grey, darker dorsally, and with a black transverse line on the anal segment.

Expanse 46 mm.

Hab. Novo Friburgo.

Symmerista dentata.

Primaries cinereous brown, the costal margin very broadly darker, the basal half being violaceous brown, the apical half paler brown; this space is limited by an irregular velvety brown line, which starts a short distance from the base, follows through the cell, at the end of which it has a posteriorly prolonged tooth, and continues to the outer margin. Secondaries cinereous brown. Palpi dark brown.

Head light grey. Thorax greyish, with the anterior portion velvety brown. Abdomen brownish.

Expanse 44 mm.

Hab. Rio Janeiro.

SYMMERISTA TETHYS.

Primaries dark cinereous with transverse brownish shades; two inner and an outer blackish line; a marginal row of black spots, inwardly edged with yellow; a yellowish spot circled with black at the end of the cell; a whitish crescent-shaped spot on the costa near the apex; the fringe with a yellow spot at the end of each vein. Secondaries brown, very dark on the outer half; the fringe and base yellowish. Underneath, the secondaries are yellow, with the costal margin narrowly, and the outer margin broadly, brown; the fringe, however, yellow. Body brown above, yellow underneath.

Expanse 45 mm.

Hab. Corcovado, Rio Janeiro.

SYMMERISTA PROCNE.

Primaries above light grey, irrorated with darker grey and reddish scales; a large space at the inner angle white; a marginal interrupted black line; a submarginal reddish transverse shade; the apex reddish brown; the fringe on the apical half of the outer margin reddish with black spots, containing each a white dot; the fringe near the inner angle white. Secondaries above brown; fringe whitish. Underneath brown; the outer margins luteous, the primaries having also a black band on the extreme margin; fringe on the primaries reddish, on the secondaries white. Head and anterior portion of thorax, also anal segment, reddish brown; body otherwise cinereous, with an indistinct greyish subdorsal line on the abdomen.

Expanse 63 mm.

Hab. Corcovado, Rio Janeiro.

SYMMERISTA MYCONOS.

Primaries above light grey; three basal irregular dark lines; in the cell a V-shaped black line; two outer, parallel, lunular lines, followed by a series of blackish spots, largest towards the costal margin; a submarginal, angular black line, preceded at the apex by a heavy blackish shade. Secondaries with the basal half whitish, the outer half dark grey, and the fringe white. Primaries underneath dull grey, with a little white towards the base and on the outer margin between the veins. Body light grey. Collar edged with black.

Expanse 34 mm.

Hab. Petropolis, Brazil.

HARPYIA (?) TENUIS.

Primaries above dull silvery white, thinly speckled with blackish

scales; a transverse, fine, black median line, preceded on the costa by a cluster of blackish scales; the costa beyond this with some small brownish spots; the outer line very fine, indistinct, followed by a broken series of large pale brown spots, not reaching the inner angle, and each outwardly enclosing a small cluster of blackish scales; the submarginal line fine, but distinct, wavy, black. Secondaries white, with a narrow brown outer margin, and the ends of the veins shaded with brownish. Underneath, the wings are whitish, the primaries with the veins and costa brownish. Head and collar light brown; thorax and extremity of abdomen grey; abdomen otherwise dorsally light brown, below white.

Expanse 36 mm.

Hab. Petropolis, Brazil.

ROSEMA EXCAVATA.

Primaries above green, a slight excavation on the outer margin just below the apex, in this excavation the fringe is white, otherwise it is brown; the costal margin is very narrowly edged with yellowish brown, and there is an indistinct whitish discal point. The secondaries above are yellowish brown in the male, yellow in the female. Underneath the wings are yellowish brown in the male, yellow in the female, with a brownish shade on the excavation of the primaries, and a row of marginal black points on the secondaries. Head and thorax green. Abdomen yellow, darker in the male.

Expanse 36 mm.

Hab. Petropolis, Brazil.

ROSEMA LUNA.

Male. Primaries above green, with the costal margin narrowly edged with white, and a small white spot in the cell; underneath whitish, with the fringe green and the costal margin reddish. Secondaries whitish. Head and thorax green. Abdomen roseate above, white underneath.

Expanse 30 mm.

The female differs in having the costal margin underneath white, and the abdomen is dorsally white, merely shaded with red towards its base.

Expanse 34 mm.

Hab. Peru, Brazil, Novo Friburgo.

ROSEMA LAPPA.

Male. Primaries with the costal margin straight for two-thirds, and then slightly convex to the apex. Above green, the costal margin very narrowly edged with yellowish; the inner margin with an irregular brown mark from the base to the inner angle, which is itself prolonged in a slight tooth; in the cell a black point. Secondaries above whitish, with the inner margin roseate. Underneath, all the wings are whitish. Head green. Collar and thorax greyish

brown, the latter green laterally. Abdomen red above, white laterally, brown underneath.

Expanse 41 mm.

Hab. Peru.

ROSEMA INCITA.

Male. The costal margin as in *Rosema lappa*, Schaus. Primaries above green; a small black point in the cell, and a long black mark on the middle of the inner margin. Underneath whitish, with the costal margin slightly roseate. Secondaries clear white. Head green. Collar brown. Thorax brown, green laterally. Abdomen above with the base brownish, otherwise reddish; underneath white.

Expanse 32 mm.

Hab. Peru.

ROSEMA LANGUIDA.

Male. Primaries with the costal margin straight; above green, the costal margin narrowly bordered with yellowish; a small black point in the cell; the inner margin with the fringe along the basal half greyish, and a small grey spot about the middle of the margin, containing a cluster of green scales. Secondaries above pale roseate. Underneath the wings are whitish, with the costal margin of the primaries reddish. Head green. Collar grey. Thorax greyish, laterally green. Abdomen roseate dorsally.

Expanse 37 mm.

Hab. Corcovado, Rio Janeiro.

ROSEMA UNDA.

Primaries above green, with the costal margin very narrowly yellowish; in the cell a black spot circled with yellowish; near the base of the inner margin a small cluster of brownish scales. Secondaries above yellowish roseate. Underneath yellowish white, with both costal margins distinctly reddish. Head green. Collar brownish. Thorax brown, laterally green. Abdomen red above, yellowish underneath.

Expanse 34 mm.

Hab. Peru; Brazil, Novo Friburgo.

RIFARGIA CLOELIA.

Primaries above cinereous, faintly mottled with greenish and roseate; at the base of the inner margin a streak of black scales, also a few at the base of the median vein; at the end of the cell a large crescent-shaped black line, from the interior of which to the apex the ground-colour is much lighter; there is a marginal row of velvety-brown streaks and three similar subapical streaks. Secondaries smoky grey, somewhat paler at the base. Underneath the wings are greyish, the secondaries paler than the primaries. Body greyish brown.

Expanse 37 mm.

Hab. Rio Janeiro.

Rifargia gelduba.

Female. Primaries above dull cinereous, with a few greenish scales along the inner and outer margins; a few black scales forming a streak at the base of the inner margin, and some similar scales at the base below the median vein; a curved brownish shade from the middle of the subcostal vein to the middle of the outer margin, enclosing a pale space; a pale space along the subcostal vein near the apex; four subapical brown streaks between these two pale spaces; a submarginal wavy brown line. Secondaries above dark grey, paler at the base. Underneath all the wings greyish. Body brownish.

Expanse 38 mm.

Hab. Jalapa, Mexico.

Etobesa tizoc.

Primaries above violaceous grey, darker at the base; on the outer half of the wing, longitudinal streaks of dark velvety brown, light brown, and creamy white, the latter streaks occurring only near the middle of the outer margin; the base of the submedian vein whitish. Secondaries above white, with the anal angle dark brown; the fringe spotted with brown. Body greyish brown; the posterior portion of the thorax darker.

Expanse 35 mm.

Hab. Peru.

Phya psamathe.

Male. Primaries light brown, a dark space at the base of the costa; a black spot in the cell, from which extends a broad brown shade to the outer margin, and beneath this on the outer margin a large brown space; the fringe spotted with dark brown. Secondaries whitish hyaline; a few brownish scales at the anal angle and along the inner margin. Body brown.

Expanse 38 mm.

Hab. Corcovado, Rio Janeiro.

Hapigia xolotl.

Primaries with the basal half of the inner margin slightly excavated; apex acute; outer margin very convex. Above dull brownish grey; the basal transverse line wavy, very indistinct; the outer line straight for two-thirds from the costa, then slightly curving towards the inner angle, brown, inwardly shaded with buff; a submarginal angular black line, shaded with silver scales, close to the apex; at the end of the cell a large irregular and a small round golden spot, the larger one having its centre reddish bronze. Secondaries above brownish grey, yellowish white towards the base. Underneath dull grey. Body grey.

Expanse 60 mm.

Hab. Paso de San Juan, Mexico.

HAPIGIA ACCIPITER.

Primaries with the costa straight; the apex acute; the outer margin straight just below the apex, then oblique to the inner angle, which is prolonged in a long, broad tooth. Above brown, shaded with olivaceous at the base; on the inner margin some pale reddish-brown marks; a median, transverse, wavy, blackish-brown line, further from the base on the inner margin than on the costal margin; in the cell a conspicuous black point, beyond which two indistinct, irregular, paler spots, faintly outlined with black; the outer line straight, dark, inwardly shaded with lighter brown; the submarginal line very irregular, black, preceded by a broad wavy shade, especially noticeable towards the apex. Secondaries above blackish brown, dull white along the costal margin; a yellow spot on the fringe at the end of each vein. Underneath all the wings yellowish, with long blackish scales on the primaries below the subcostal vein. Body dark olivaceous brown above, reddish brown underneath.

Expanse 70 mm.

Hab. Rio Janeiro.

HAPIGIA PHOCUS.

Shape of wings and markings very similar to *Hapigia apulus*, Cramer. Primaries above much darker than in *H. apulus*, being of a rich velvety brown, with the inner and outer margins paler; the outer transverse line is not so wavy as in *H. apulus*, and the two silver spots in the cell are closer together. Secondaries above white; the inner margin and fringe greyish brown; the veins brownish. In *H. apulus* the apex of the secondaries is broadly shaded with brown. Underneath the wings are whitish, with the costa and apex of the primaries powdered with brown. Head and thorax brown. Abdomen above black. Underneath brown. Anal hairs testaceous.

Expanse 70 mm.

Hab. Rio Janeiro, Brazil.

RHUDA ENDYMION.

Primaries above with the anterior portion of the wing shading from light brown at the base to pale buff towards the outer margin, and with a few longitudinal dark streaks; a heavy velvety-brown line, extending from the base of the costa to the middle of the outer margin, separates the brownish portion of the wing from the posterior portion which is light grey; on this grey space a trace of the outer line is visible; the costal margin towards the apex is also greyish; on the extreme outer margin a row of V-shaped brown marks. Secondaries white; the inner margin broadly covered with long brown scales, and the outer margin spotted with brown. Underneath the wings are whitish, with the costal margin of the primaries broadly smoky brown. Head brown. Collar velvety brown. Thorax grey. Abdomen above brownish grey, below whitish.

Expanse 58 mm.

Hab. Rio Janeiro.

Peter Smit del. et lith.

Mintern Bros. imp.

INDIAN FROGS.

ICHTHYOSOMA CASSIOPE.

Primaries very pale fawn-colour, crossed by four narrow, double, zigzag lines of a darker shade—one at the base, one through the end of the cell, the third beyond the cell, and the fourth marginal, the latter shaded inwardly with smoky brown; on the middle of the inner margin a reddish-brown spot. Secondaries white, the inner margin covered with long reddish-brown scales. Underneath white, slightly reddish on the costal margins. Thorax and abdomen above pale reddish brown; underneath white.

Expanse 49 mm.

Hab. Rio Janeiro.

MARTHULA NORA.

Primaries above brown, broadly lilacine on the inner margin, and some reddish-brown shades along the costal margin and about the middle of the outer margin; the basal, median, outer, and submarginal lines pale, the first three absorbed by the ground-colour on the costal margin, where crossing the reddish-brown shades. Underneath brownish, with a broad whitish marginal shade. Secondaries above white, with the veins and outer margin shaded with brown. Underneath white. Head reddish brown. Collar and abdomen brown. Thorax lilacine.

Expanse 34 mm.

Hab. Corcovado, Rio Janeiro.

MARTHULA PLEIONE.

Primaries above brown, the inner margin broadly grey; the basal, median, and outer lines only visible on the inner margin; the submarginal line distinct throughout; a marginal row of black points; on the costa near the base a small yellowish-white patch, and a much larger one about the middle of the costa, these are both crossed by irregular reddish-brown lines. Underneath brown. Secondaries above brown, slightly hyaline towards the base. Underneath yellowish white. Body greyish brown.

Expanse 36 mm.

Hab. Corcovado, Rio Janeiro.

4. On some Specimens of Frogs in the Indian Museum, Calcutta, with Descriptions of several new Species. By W. L. SCLATER, M.A., F.Z.S.

[Received May 2, 1892.]

(Plate XXIV.)

Before leaving Calcutta at the end of last year I had been engaged in examining the collection of Batrachians contained in the Indian Museum.

The collection comprises examples of 180 species, of which 103

are Indian and Malayan, and 77 are exotic. The number of specimens is 2045, of which again the bulk (1698) are Indian, and 347 are exotic.

The number of species of Batrachians described in Mr. Boulenger's recent book ('Reptilia and Batrachia of British India') is 130, of which 5 are referred to the Batrachia Apoda, and 1 to the Batrachia Caudata; leaving 124 belonging to the Batrachia Salientia; so that it will be seen that a considerable number of the Indian species are still unrepresented in the Indian Museum. A list of these desiderata is given below.

The collection contains a considerable number of types described by Stoliczka, Anderson, Blyth, and others. Of these also I have thought it worth while to give a list.

A complete list of the specimens of Batrachians in the Indian Museum which I have drawn up will shortly be printed and published by order of the Trustees. In the meanwhile I offer to the Society these notes upon some of the more noteworthy specimens.

My best thanks are due to Mr. G. A. Boulenger of the British Museum, who has most kindly assisted me both in naming obscure specimens and in drawing up the descriptions of the new species. The types of the latter will all be returned to the Indian Museum.

1. Rana vicina. (Plate XXIV. figs. 1, 1 *a*.)

This Frog was described by Stoliczka (Proc. As. Soc. Beng. 1872, p. 130), and was with doubt referred by Boulenger (Ind. Rept. p. 445) to *Rana liebigii*.

An examination of the type at once shows that this Frog has nothing to do with *R. liebigii*, but that it must remain separate as a distinct species.

The following is a redescription of the type:—Vomerine teeth, two small oblique groups commencing at the middle of the choanæ and extending somewhat behind them; no tooth-like prominence on the lower jaw in the two specimens available for examination; head moderate; snout somewhat oval; canthus rostralis slightly marked; nostril halfway between the eye and the tip of the snout; upper eyelid two-thirds the width of the interorbital space; no trace of the tympanum; fingers blunt, first slightly shorter than the second; toes webbed to the extreme tips; subarticular tubercles well marked and a long narrow not very large inner metatarsal tubercle, about half the length of the inner toes; no outer metatarsal tubercle; tibio-tarsal articulation reaches to in front of the eye; skin of back and belly smooth, a few tubercles on the flanks. Brown above; hind limbs mottled darker; upper lip dark brown and a dark irregular line from the nostril to the eye and from the eye to the commencement of the arm; below lighter brown, rather darker under the chin.

This Frog seems on the whole most nearly allied to *R. corrugata*, Peters, from Ceylon, from which, however, it differs in the absence of the tooth-like prominences of the lower jaw, the much broader

upper eyelid, and the longer legs; its aspect, too, is different, owing to the eyes being normally placed, instead of being prominently turned upwards.

Besides the original type, which was procured by Stoliczka at Murree, in the Himalayas, at an elevation of 6000 ft., there is a second specimen in the Indian Museum presented by Lieut. Newnham, and procured near Simla. The figure is taken from the former specimen, the type of the species.

2. Rana liebigii, Günth.; Boulenger, Ind. Rept. p. 445.

This species has not been known to occur west of Nepal, whence came the type. There is, however, an example in the Indian Museum from Tavoy in Southern Burma, which extends its geographical range considerably beyond what has hitherto been known.

3. Rana feæ, Boulenger, Ann. Mus. Genova, (2) v. 1887, p. 418, pl. iii.; id. Ind. Rept. p. 446.

Among the Frogs of the Indian Museum I have found a second specimen of this species. This was procured at Hotha in Yunan by Dr. J. Anderson, but was apparently not described by him in his 'Scientific Results of the Yunan Expedition.'

4. Rana assamensis, sp. n. (Plate XXIV. figs. 2, 2 *a*.)

Vomerine teeth in two strong, slightly oblique, series between the choanæ, commencing at the inner anterior corner; lower jaw not provided with bony prominences in the single specimen available for examination; head moderate, somewhat blunt and narrow; nostril equidistant from the eye and the tip of the snout; interorbital space very slightly broader than the upper eyelid; canthus rostralis marked, loreal region concave; tympanum very distinct, somewhat oval, barely half the diameter of the eye; fingers rather slender, the first and second nearly equal in length; toes webbed to the tips, with the tips slightly swollen; subarticular tubercles well developed, inner metatarsal tubercle elongate, and about two-thirds the length of the inner toe; no outer tubercle; a tarsal fold present; the tibio-tarsal articulation reaches well beyond the tip of the snout; skin smooth above and below.

Colour in spirit: above brown, the canthus rostralis and a patch behind the eye embracing the tympanum darker; a dark line with white edges running from the eye on either side backwards to the sacrum, corresponding in position to the glandular lateral folds, but no trace of a glandular lateral thickening can be distinguished; legs transversely barred; below lighter, with darker spots on the lower jaw.

Length from snout to vent 70 millim.

Allied to *Rana andersonii*, but the vomerine teeth commence at the anterior inner edge of the choanæ, and the legs are considerably longer, the tibio-tarsal articulation reaching some way beyond the tip of the snout.

Described from a single specimen in the Indian Museum, procured by the late Dr. Jerdon in the Khasia hills in Assam.

5. Rana hascheana, Stoliczka, Journ. As. Soc. Beng. xxxix. 1870, p. 147, pl. ix. fig. 3.

An examination of the type of this species preserved in the Indian Museum shows that it is nearly allied to *R. doriæ*, Boulg. The general shape is the same, the legs are about the same length, and the vomerine teeth commence on a level with the hinder edge of the choanæ. The only real distinction is in the toes, which in *R. doriæ* are webbed to the tips, but in *R. hascheana* for only about one-third of their length.

6. Rana limborgi, sp. n. (Plate XXIV. figs. 3, 3 *a*.)

Vomerine teeth in two oblique groups, commencing on a level with the choanæ and extending well behind them; slight traces of the bony prominences of the lower jaw; head moderate; snout short, hardly longer than the diameter of the orbit; canthus rostralis very rounded, hardly marked; loreal region almost flat; nostril about equidistant from the tip of the snout and the front of the orbit; interorbital space as broad as the upper eyelid; tympanum distinct, nearly as large as the eye, with a very thick fold above it; first finger extending slightly beyond the second; toes moderate, slender, only about a third webbed, the web extending only about halfway up the first joint of the digits; a slight cutaneous ridge along the fifth toe; tips of fingers and toes but very slightly swollen; subarticular tubercles fairly well developed; no outer metatarsal tubercle; a large, compressed, fairly sharp-ridged inner metatarsal tubercle, very nearly as large as the inner toe; traces of a tarsal fold present; the tibio-tarsal articulation reaches the nostril; skin above granular, with slight traces of a granular lateral fold running back on either side from behind the eye and a transverse fold between its posterior borders; below smooth.

Colour above a faded olive-brown, below lighter.

Length from snout to vent 24 millim.

This species is somewhat intermediate between *R. doriæ* and *R. rufescens*; from the former it differs in having only very slightly webbed toes and a compressed flattened metatarsal tubercle, and from the latter in its vomerine teeth, which commence only on a level with the posterior corners of the choanæ, and from both in the presence of its rudimentary glandular lateral fold.

This description is taken from a single specimen procured in Tenasserim by Mr. Limborg, to whom I have dedicated the species.

7. Rana tigrina, Daud.; Boulenger, Ind. Rept. p. 449.

A small Frog from Penang, described by Stoliczka (Journ. As. Soc. Beng. xxxix. 1870, p. 142) as *R. gracilis*, var. *pulla*, seems to be merely the young of *R. tigrina*; that the type has only just lost the larval tail is shown by the persistence of the tail-scar.

8. Rana tenasserimensis, sp. n. (Plate XXIV. figs. 4, 4 *a*.)

Vomerine teeth not well developed, in one specimen absent altogether, in another in two oval groups between the choanæ; no papillæ on the tongue; head short and rounded, with indistinct canthus rostralis and slightly concave loreal region; nostril a good deal nearer the tip of the snout than the eye; interorbital space somewhat wider than the upper eyelid; tympanum distinct, about two-thirds the size of the eye; fingers and toes moderate, the tips dilated into quite large disks, about one-third the size of the tympanum; first finger much shorter than the second; toes rather less than one-third webbed, webs extending to about a level with the first joint of the phalanges; subarticular tubercles moderate; a small oval, flat, inner metatarsal tubercle; no tarsal fold; a fringe along the fifth toe; tibio-tarsal articulation reaching to a level with the front of the eye; skin of the back wrinkled into short longitudinal glandular folds; a fold from the eye to the shoulder above the tympanum.

Above brown, with darker spots and scattered white blotches; limbs both fore and hind cross-barred; beneath lighter brown, minutely speckled with darker.

Length, snout to vent 22 millim.

This Frog seems to be most nearly allied to *R. leptodactyla*, from which, however, it differs in wanting the free pointed papillæ of the tongue and having shorter legs. It is altogether a very distinct species.

It is perhaps somewhat near to *R. hascheana*, Stol. (above, p. 344), from which, however, it differs in its rough granular skin, its indistinct vomerine teeth, and lastly, and chiefly, in its very much larger fingers and toe-disks.

There are five examples of this species in the Indian Museum, all collected by Mr. Limborg in Tenasserim.

9. Rana gracilis, Gravenh.; Boulenger, Ind. Rept. p. 456.

The type of *Lymnodytes macularius*, Blyth, which species has been identified by Boulenger with *R. gracilis*, Gravenh., agrees very well with the description given of this Frog by Boulenger (*loc. cit.*), except for the fact that the skin above is very distinctly granulate, as in *R. malabarica*.

10. Rana nigrovittata (=tytleri) and R. erythræa.

The distinction drawn by Boulenger, namely, the presence of an outer metatarsal tubercle in *R. tytleri* and its absence in *R. erythræa*, does not seem to be very constant; in fact the only difference of specific value between the two forms seems to be that in *R. erythræa* the dorsal glandular lateral fold is very much thicker and more prominent than in *R. tytleri*.

The type of *Hylorana tytleri* of Theobald, which is in the Indian Museum, has a very thick glandular lateral fold, and must therefore be referred to *R. erythræa*; the other species, the form described by Boulenger under the name *R. tytleri*, will therefore require

another name. *Hylorana leptoglossa*, Cope, the second name in Boulenger's list of synonyms, also refers to a species with a thick and heavy glandular lateral fold, and must therefore be referred to *R. erythræa* too; of *Hylorana pipiens*, Jerdon, the specific name "*pipiens*" is already engaged; *Hylorana granulosa*, Anderson, refers to a different species altogether (see below).

The type of *Limnodytes nigrovittatus* (Blyth, Journ. As. Soc. Beng. xxiv. 1855, p. 718) is still in the Indian Museum, and an examination of it shows that it must clearly be referred to Boulenger's *Rana tytleri*. The species will therefore stand under the name *Rana nigrovittata* (Blyth).

There are examples of this species in the Museum from all parts of Assam, Cachar, Pegu, and Tenasserim, and of *R. erythræa* from Lower Bengal (Calcutta and Dacca), Assam, and Burma.

11. RANA GRANULOSA, Anderson, Journ. As. Soc. Beng. xl. 1871, p. 23.

This species has been provisionally identified by Boulenger (Ind. Rept. p. 458) with *Rana nigrovittata* (=*Rana tytleri*, Boul.), but it differs markedly from it in many ways. The vomerine teeth are longer, and usually reach to well behind the choanæ; the first finger extends well beyond the second; the toes are two-thirds webbed, the web being deeply incised and barely reaching to the tips of the third and fifth digits; the subarticular and the inner and outer metatarsal tubercles are all very strongly developed; the skin of the back is markedly granulate, with broad prominent glandular lateral folds; there is a second glandular fold along the upper lips from below the eye to the shoulder, ending in a large rounded granule; the colour is reddish brown above, irregularly spotted, darker below, speckled throughout.

12. RHACOPHORUS LATERALIS, Boulenger, Ann. Mag. N. H. (5) xii. 1883, p. 162; id. Ind. Rept. p. 473.

There is a second specimen of this hitherto unique species in the Indian Museum; it was obtained by Mr. W. M. Daly at Koppa in Mysore, and by him presented to the Museum.

13. RHACOPHORUS CAVIROSTRIS (Günth.); Boulenger, Ind. Rept. p. 481.

There is a Frog in the Indian Museum resembling the type of *R. cavirostris* in every respect, except that the hind limbs are a little longer, since the tibio-tarsal articulation reaches the tip of the snout, whereas in the typical form the tibio-tarsal articulation reaches only to between the eye and the snout.

The Indian Museum specimen was procured by Limborg in Tenasserim, and, if correctly referred to *R. cavirostris*, considerably extends the distribution of this species, which has hitherto been known only from Ceylon.